PHYSICS

UPGRADE OF LEVEL ONE TRACK TRIGGER

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In 2001, the Collider Detector at Fermilab began collecting data. An important component of the CDF trigger system was the extremely fast tracker (XFT), which identifies charged tracks in the central outer tracker (COT) drift chamber. The XFT, which utilizes programmable logic devices (PLDs), has been operating extremely well. By 2005, the Tevatron's luminosity is expected to increase by a factor of ten. In order to handle the increased number of interactions, which result, an upgrade of the XFT is necessary. The upgraded XFT will use more precise timing information from the COT. We describe the conceptual design of the XFT upgrade, and an initial implementation of this upgrade using the latest PLDs.